

L8 ANSWER 1 OF 6 USPATFULL on STN  
 AN 2002:64073 USPATFULL  
 TI Hydro-fluorination of chlorinated hydrocarbons  
 IN Wilmet, Vincent, Wavre, BELGIUM  
 Janssens, Francine, Vilvoorde, BELGIUM  
 PA Solvay (Societe Anonyme), BELGIUM (non-U.S. corporation)  
 PI US 6362383 B1 20020326  
 WO 9943635 19990902  
 AI US 2000-623345 20000929 (9)  
 WO 1999-BE28 19990225  
 20000929 PCT 371 date  
 PRAI BE 1998-150 19980226  
 DT Utility  
 FS GRANTED  
 EXNAM Primary Examiner: Siegel, Alan  
 LREP Connolly Bove Lodge & Hutz LLP  
 CLMN Number of Claims: 21  
 ECL Exemplary Claim: 1  
 DRWN 0 Drawing Figure(s); 0 Drawing Page(s)  
 LN.CNT 551

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Improved process for the catalytic hydro-fluorination of saturated or unsaturated organic compounds corresponding to the general formula  $C_{\text{sub}}.wH_{\text{sub}}.xCl_{\text{sub}}.yF_{\text{sub}}.z$  (I) in which w is an integer between 1 and 6, x is an integer between 0 and (2w+1) or between 0 and (2w-1), y is an integer between 1 and (2w+1) or between 1 and (2w-1), z is an integer between 0 and (2w+1) or between 0 and (2w-1) and the sum (x+y+z) is equal to (2w+2), comprising a continuous feed of hydrogen chloride.

Process for preparing 1,1,1,3,3-pentafluoropropane starting with 1,1,1,3,3-pentachloropropane, comprising two catalytic reaction steps, in which hydrogen chloride is preferably fed continuously into the reaction medium of at least one of the two reaction steps.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1  
 AN 1999:566007 CAPLUS  
 DN 131:171860  
 TI Process for the hydrofluorination of chlorinated hydrocarbons  
 IN Wilmet, Vincent; Janssens, Francine  
 PA Solvay (Societe Anonyme), Belg.  
 SO PCT Int. Appl., 23 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA French  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9943635	A1	19990902	WO 1999-BE28	19990225
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
BE 1011765	A3	20000111	BE 1998-150	19980226
CA 2321892	AA	19990902	CA 1999-2321892	19990225
AU 9926045	A1	19990915	AU 1999-26045	19990225
AU 755404	B2	20021212		

EP 1056698 A1 20001206 EP 1999-905981 19990225  
 EP 1056698 B1 20031210  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, FI  
 JP 2002504528 T2 20020212 JP 2000-533394 19990225  
 AT 256093 E 20031215 AT 1999-905981 19990225  
 US 6362383 B1 20020326 US 2000-623345 20000929  
 PRAI BE 1998-150 A 19980226  
 WO 1999-BE28 W 19990225  
 OS MARPAT 131:171860  
 AB The fluorination of saturated or unsatd. chlorocarbons is achieved by reacting  
 them with HF in the presence of a catalyst (e.g., TiCl<sub>4</sub>) and continuously  
 feeding HCl into the reaction mixture In this manner, 1,1,1,3,3-  
 pentafluoropropane is manufactured from 1,1,1,3,3-pentachloropropane.  
 RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 2

AN 1999:576671 CAPLUS

DN 131:171865

TI Method and catalysts for producing fluorinated propane

IN Hibino, Yasuo; Tamai, Ryouichi; Kaneda, Shouzou

PA Central Glass Company, Limited, Japan

SO Eur. Pat. Appl., 19 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 939071	A1	19990901	EP 1999-103578	19990224
	EP 939071	B1	20030730		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2000007591	A2	20000111	JP 1999-27999	19990205
	JP 3031464	B2	20000410		
	JP 2000143561	A2	20000523	JP 1999-353925	19990205
	JP 3154702	B2	20010409		
	JP 2000007592	A2	20000111	JP 1999-48203	19990225
	JP 3031465	B2	20000410		
PRAI	JP 1998-45088	A	19980226		
	JP 1998-109586	A	19980420		
	JP 1999-27999	A3	19990205		

OS MARPAT 131:171865

AB An industrial-scale method for producing a fluorinated propane (e.g.,  
 1,1,1,3,3-pentafluoropropane) comprises: (a) fluorinating a halogenated  
 propane (e.g., 1,1,1,3,3-pentachloropropane) and/or a halogenated propene  
 with HF in the gas phase in the presence of a first fluorination catalyst  
 (e.g., fluorinated alumina) to produce a reaction gas containing a fluorinated  
 propene (e.g., 1-chloro-3,3,3-trifluoropropene or 1,3,3,3-  
 tetrafluoropropene); and (b) fluorinating the fluorinated propene with HF  
 in the gas phase by transferring the reaction gas from step (a) to a  
 reaction zone in which a second fluorination catalyst having an activated  
 carbon support of a halide of a high-valence metal (e.g., SbCl<sub>5</sub>) is  
 present to obtain the fluorinated propane.

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3

AN 1998:55598 CAPLUS

DN 128:90315

TI Fluorination process and catalysts for the manufacture of

1,1,1,3,3-pentafluoropropane and 1,1,1,3,3,3-hexafluoropropane from  
 1,1,1,3,3-pentachloropropane and 1,1,1,3,3,3-hexachloropropane with

recovery and process recycle of hydrogen fluoride  
IN Tung, Hsueh Sung; Merkel, Daniel Christopher; Dziadyk, Zenart Joseph;  
Carson, Clayton Herbert; Pham, Hang Thanh; Ellis, Lois Anne Shorts  
PA Alliedsignal Inc., USA  
SO PCT Int. Appl., 25 pp.  
CODEN: PIXXD2

DT Patent  
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9800378	A1	19980108	WO 1997-US11373	19970702
	W: JP, KR				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5763706	A	19980609	US 1996-675020	19960703
PRAI	US 1996-675020	A	19960703		

AB In the title process, 1,1,1,3,3-pentachloropropane and/or 1,1,1,3,3,3-hexachloropropane are/is fluorinated with HF in the liquid phase in the presence of a Group IVB or VB metal halide catalyst (e.g., SbCl<sub>5</sub>), the byproduct HCl optionally removed by distillation, and the HF present in the product mixture, forming a fluorocarbon-HF azeotropic mixture, is phase separated

by the addition of H<sub>2</sub>SO<sub>4</sub> and recovered from the H<sub>2</sub>SO<sub>4</sub> phase by liquid-vapor extraction Unsaturated byproduct compounds are removed by photochlorination and the title compound(s) obtained by distillation A process flow diagram is presented.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 4

AN 1998:62263 CAPLUS

DN 128:90318

TI Vapor-phase fluorination process and catalysts for the manufacture of 1,1,1,3,3-pentafluoropropane

IN Tung, Hsueh Sung

PA Alliedsignal Inc., USA

SO U.S., 5 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5710352	A	19980120	US 1996-716013	19960919
	WO 9812161	A1	19980326	WO 1997-US16966	19970919
	W: JP, KR				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 931043	A1	19990728	EP 1997-942663	19970919
	EP 931043	B1	20030813		
	R: DE, ES, FR, GB, IT, NL				
	JP 2001500882	T2	20010123	JP 1998-514990	19970919
	JP 3393142	B2	20030407		
PRAI	US 1996-716013	A	19960919		
	WO 1997-US16966	W	19970919		

AB In the title process, 1,1,1,3,3-pentafluoropropane (HFC-245fa) is prepared by the vapor-phase fluorination of 1,1,1,3,3-pentachloropropane (HCC-240fa) with HF in the presence of a Group IVB or VB metal halide catalyst. The byproducts, 1-chloro-3,3,3-trifluoropropene and 1,3,3,3-tetrafluoropropene, are distilled from the HFC-245fa and recycled for further HF fluorination thus producing a >99% HCC-240fa conversion. The title vapor-phase fluorination process is less corrosive than a comparable liquid-phase process.

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

1  
L8 ANSWER 6 OF 6 USPATFULL on STN  
AN 1998:65483 USPATFULL  
TI Process for the manufacture of 1,1,1,3,3-pentafluoropropane and  
1,1,1,3,3,3-hexafluoropropane  
IN Tung, Hsueh Sung, Getzville, NY, United States  
Merkel, Daniel Chistopher, West Seneca, NY, United States  
Dziadyk, Zenart Joseph, Lancaster, Canada  
Carson, Clayton Herbert, Clarence Center, NY, United States  
Pham, Hang Thanh, Amherst, NY, United States  
PA AlliedSignal Inc., Morristown, NJ, United States (U.S. corporation)  
PI US 5763706 19980609  
AI US 1996-675020 19960703 (8)  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Shaver, Paul F.  
LREP Friedenson, Jay P.  
CLMN Number of Claims: 27  
ECL Exemplary Claim: 1  
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)  
LN.CNT 380

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An integrated manufacturing process for producing HFC-245fa, HFC-236fa or a mixture thereof by reaction of HCC-240fa, HCC-230 or a mixture thereof with HF. HCC-240fa, HCC-230 or a mixture thereof is reacted with hydrogen fluoride in a liquid phase in the presence of a fluorination catalyst. Optionally, produced HCl is removed by distillation. HF present is thereafter recovered by liquid-vapor extraction. Unsaturated compounds are then removed by photochlorination and HFC-245fa, HFC-236fa or a mixture thereof is obtained by distillation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

(FILE 'HOME' ENTERED AT 12:57:58 ON 08 AUG 2004)

FILE 'REGISTRY' ENTERED AT 12:58:04 ON 08 AUG 2004

L1 1 S 1,1,1,3,3-PENTACHLOROPROPANE/CN  
L2 1 S 1,1,1,3,3-PENTAFLUOROPROPANE/CN  
L3 1 S HYDROGEN FLUORIDE/CN  
L4 1 S HYDROGEN CHLORIDE/CN

FILE 'CAPLUS, USPATFULL, CA, CAOLD' ENTERED AT 12:59:24 ON 08 AUG 2004

L5 120 S L1 AND L2  
L6 82 S L5 AND L3  
L7 11 S L6 AND L4  
L8 6 DUP REM L7 (5 DUPLICATES REMOVED)